

DIAMOND DARTER (*Crystallaria cincotta*)

SPOTLIGHT SPECIES ACTION PLAN

Prepared by:

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Date

U.S. FISH AND WILDLIFE SERVICE - SPOTLIGHT SPECIES ACTION PLAN**Common Name:** Diamond Darter**Scientific Name:** *Crystallaria cincotta***Lead Region:** Region 5**Lead Field Office:** West Virginia Field Office (WVFO)**Species Information:**

Status: Candidate Assessment submitted to Washington Office

Listing Priority Number: 2

Recovery Plan or Candidate Assessment Form: September 2009

Most Recent 5-year Review: NA

Other: None

Threats: The primary threats to the diamond darter are related to the present or threatened destruction, modification, or curtailment of its habitat or range. The species is currently known to exist only in the lower portions of the Elk River in Kanawha and Clay counties, West Virginia. This watershed is threatened with ongoing water quality degradation and habitat loss from activities such as coal mining, oil and gas development, siltation from these and other sources, and inadequate sewage and wastewater treatment. The small size and restricted range of the remaining diamond darter population make it particularly susceptible to the effects of genetic inbreeding, as well as potential extirpation from spills and other catastrophic events.

Goal The 5-year goal for the diamond darter is to reduce the risk of extinction due to habitat-based threats.

Measure: Within the 5-year planning horizon, the U.S. Fish and Wildlife Service (Service) will use the following measures to gauge our progress towards reaching the goal:

1. The continued presence of the diamond darter within the Elk River watershed, as documented through surveys or other monitoring efforts.
2. The number of actions (specified below) or portions of the range where actions were effective in reducing habitat-based threats to the diamond darter (as tracked by TAILS, Work Activity Guidance, or other established reporting formats).

Actions:

The September 2009 candidate assessment for the species provided a list of recommended conservation measures that were developed based on discussions with species experts, review of State Wildlife Conservation Action Plans (including both West Virginia and other States where the diamond darter historically occurred), and the evaluation of threats presented in the assessment. The actions proposed in the assessment were comprehensive and not presented in any order of priority. Because it would not be feasible to accomplish all of the proposed actions within a 5-year time frame, we have prioritized the following three actions based on our assessment of the magnitude and imminence of the various threats to the species.

1. ***Develop and implement a program to regularly monitor diamond darter populations and habitat quality within the Elk River watershed:*** A regular monitoring program will need to be developed and implemented in order to more effectively track the status of the species and respond to ongoing and emerging threats. Currently, surveys and monitoring in the Elk River are only conducted intermittently and may not be focused specifically on the diamond darter. We will work with partners such as the West Virginia Division of Natural Resources (WVDNR), West Virginia Division of Environmental Protection (WVDEP), and West Virginia University/West Virginia Cooperative Fish and Wildlife Research Unit (WVU) to develop a monitoring program that will include continued population surveys for the species, as well as measures of water quality and other habitat conditions. ***Estimated costs:*** Approximately \$20,000 for the first year of monitoring, to include staff time (WVDNR or WVU), purchase of water quality monitoring equipment, and laboratory analysis of samples. An additional \$10,000 will be required for each year of monitoring thereafter for staff time and data analysis.
2. ***Work with partners to reduce habitat-based threats, focusing on the threats of coal mining, oil and gas development, and direct habitat alterations:*** As described in the candidate assessment, coal mining activities and oil and gas development are occurring throughout the range of the species. These activities are reducing water quality and increasing sedimentation in diamond darter habitats. In addition, there are a number of proposed bridge construction/repair projects and pipeline/waterline crossings currently being proposed within the range of the diamond darter that have the potential to directly disturb spawning and foraging habitat. The WVFO will proactively work with partners such as the WVDEP, the Federal Highway Administration (FHWA), West Virginia Division of Highways (WVDOH), and other project proponents to cooperatively develop measures to avoid and minimize impacts from these activities, and to incorporate habitat restoration and protection measures into project construction and operations. ***Estimated costs:*** Approximately \$15,000 per year based on dedicating existing WVFO Endangered Species staff time. Additional time (up to two times the currently projected amount) could be spent on this activity, but sufficient WVFO staff is currently not available.
3. ***Develop and maintain a captive-held “ark population” in order to avert potential extinction in the event of a major spill event on the Elk River:*** The diamond darter is currently only known to exist within a 36-km (22.4-mile) section of the lower Elk River in Kanawha and Clay counties, West Virginia, and is therefore, particularly susceptible to potential extirpation from spills and other catastrophic events. Given the abundance of coal, oil, and gas development in the watershed, as well as the presence of abandoned mine lands and other sources of potential contamination, the risk of such a spill occurring is high. The candidate assessment cited examples of a number of recent spills in nearby watersheds, and a spill in Dunkard Creek (a watershed north and outside of the Elk River drainage that is subject to similar threats) recently caused a fish kill in over 10 miles of stream. In order to reduce the risk of extinction due to this threat, we will work to develop a reproducing “ark population” at Conservation Fisheries, Inc. (CFI) in Tennessee. This facility is currently holding three diamond darters and WVDNR and WVU are currently working to collect additional specimens for CFI’s efforts. Funding for an initial year’s effort has been obtained,

and we will seek funding to continue and expand this initiative. *Estimated costs:*
Approximately \$20,000 per year for an additional 4 years.

Role of other agencies:

WVDNR is the primary agency responsible for managing fish and wildlife in the West Virginia. They routinely take the lead in conducting monitoring of species, either through their own programs or with the help of Service funding provided through Section 6 of the Endangered Species Act (ESA) and State Wildlife Grants. WVDNR could therefore participate by coordinating or conducting monitoring for the diamond darter. They also serve in an advisory capacity on various permitting programs for proposed development activities. Support and cooperation of the WVDNR will be critical in working with partners to reduce habitat-based threats.

WVDEP is the primary agency responsible for maintaining water quality and for permitting and oversight of coal, oil, and gas development. Coordination with and support of the WVDEP will be critical in reducing habitat-based threats by ensuring that permit decisions involve an analysis of potential effects to the species, appropriate conditions are incorporated into any permits issued, and enforcement and remediation of any permit violations occurs. They may also assist in the development of a water quality component to the monitoring plan and in conducting outreach and education to potential stakeholders.

WVU currently is responsible for conducting most of the research on diamond darter distribution, habitat requirements, and life history. They may assist by providing technical expertise during the development and implementation of a monitoring program. Their knowledge of species biology may also help the Service to determine how the species will respond to specific habitat-based threats.

U. S. Army Corps of Engineers (USACE) is the primary agency responsible for the review and issuance of any permits for the fill or alteration of waters of the United States. These types of activities can result in the direct or indirect loss of diamond darter habitat. Coordination with and support of the USACE will be critical in reducing habitat-based threats by ensuring permit decisions involve an analysis of potential effects to the species, appropriate conditions are incorporated into any permits issued, and enforcement and remediation of any permit violations occurs. They may also assist in conducting outreach and education to potential stakeholders.

Federal Highway Administration and West Virginia Department of Highway are the primary agencies responsible for maintaining and constructing roads, bridges, and other transportation features, many of which cross or parallel the Elk River. The cooperation and support of these agencies will allow us to reduce habitat-based threats by ensuring that these transportation features are designed, constructed, and maintained in a way that will avoid and minimize impacts to the species.

Natural Resource Conservation Service works with landowners to develop improved land management practices that can reduce erosion and sedimentation. They may assist by

conducting outreach and education to landowners in the Elk River watershed, and by developing and implementing projects to reduce sedimentation and other habitat-based threats.

Role of other Service programs:

The actions listed above will be primarily conducted through the Candidate Conservation and Listing programs at the WVFO with the support of the Service's Regional and Washington offices. If the species becomes listed, additional work under ESA Section 7 and the Recovery Program will occur. Cooperative efforts of the following other Service programs will enhance diamond darter conservation efforts:

- The Grants Program currently provides funding to the WVDNR under Section 6 of the ESA. Although no funding for the diamond darter has been provided to-date, if the species is listed, this program may assist by providing additional funds to the WVDNR and other partners to conduct the actions listed above or other actions that would provide increased protection and recovery.
- Staff in the Fisheries Program currently work with Ecological Services to help fund and support the development on the "ark population." Their assistance will hopefully allow this activity to continue. In the future, enhanced cooperation with this program could assist in the development and implementation of a monitoring plan, or by helping to plan and conduct research to evaluate the species response to water quality and habitat-based threats.
- The Partners for Fish and Wildlife Program works with landowners to implement practices to benefit fish and wildlife. The Elk River has been identified as a focus area for the WVFO. The Partners Program may assist by conducting outreach and education to landowners in the Elk River watershed, and by developing and implementing projects to reduce sedimentation and other habitat-based threats.
- Conservation Planning Assistance works directly with other Federal agencies and other partners to assist project proponents, planners, and agency personnel in developing plans that conserve, restore, or enhance fish and wildlife while at the same time accomplishing the objectives of proposed development. Their assistance will help ensure that projects proposed within the Elk River watershed will be designed, constructed, and maintained in a way that will avoid and minimize impacts to the species.
- The Contaminants Program could assist in evaluating the effects of various proposed projects on the water quality of the Elk River and the resulting effects to the diamond darter. They may also be able to provide assistance to plan or conduct research into the effects of coal, oil, and gas development on the reproduction and survival of the species.
- The Law Enforcement Program could assist by ensuring any violations of water quality laws or other permitting programs are appropriately investigated, enforced, and/or remediated. If the diamond darter is listed, any actions resulting in unauthorized take of the species could be pursued.

Additional funding analysis:

Additional funding would enable the Service to accelerate and expand conservation efforts, further reducing the threat of extinction of the diamond darter. The WVFO currently has very limited staff, and our ability to work on the actions listed above may be hampered by competing priorities and heavy workload. Additional funds or staff would be used to increase our ability to effectively respond to threats in the watershed, such as planning for programmatic and/or watershed-level actions to address energy development and associated water quality and habitat degradation. The WVFO has already begun to work with partners to seek initial years funding to support actions #1 (monitoring) and #3 (“ark population” development), but increased funding to continue the effort in subsequent years will be needed. If additional funding is not obtained, progress on these actions will be delayed or limited. Finally, other high-priority actions that were identified in the candidate assessment will not be able to move forward without additional funding. These actions include:

- Search for other diamond darter populations by conducting additional surveys within remaining suitable habitat in the Cumberland River watershed and other areas within the Ohio River Basin. *Estimated costs:* One time cost of approximately \$30,000.
- Conduct research to further quantify the effects of sedimentation and water quality changes on the survival and reproduction of the species. *Estimated costs:* One time cost of approximately \$50,000 to 100,000 depending on extent of research.
- Develop an estimate of effective population size within the Elk River through non-lethal genetics analysis. *Estimated costs:* One time cost of approximately \$30,000.
- Conduct outreach and education efforts targeting landowners and other stakeholders within the Elk River watershed that highlight the importance of the Elk River, the diamond darter, and the need to maintain high water and habitat quality. *Estimated costs:* Annual cost of approximately \$10,000, or \$25,000 spread over multiple years.